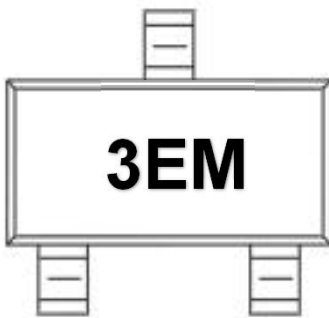


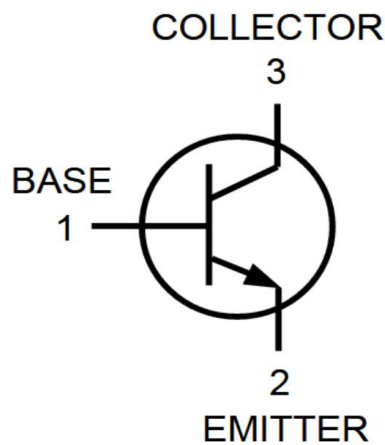
## SOT-23 Plastic-Encapsulate Transistors

### TRANSISTOR (NPN)

#### MARKING:

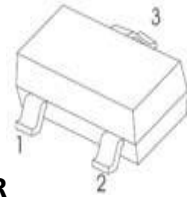


#### Equivalent Circuit:



#### SOT-23

1. BASE
2. EMITTER
3. COLLECTOR



#### FEATURES:

- ※ AM/FM Amplifier, Local Oscillator of FM/VHF Tuner
- ※ High Current Gain Bandwidth Product

#### MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	VCBO	30	V
Collector-Emitter Voltage	VCEO	25	V
Emitter-Base Voltage	VEBO	3	V
Collector Current	IC	50	mA
Collector Power Dissipation	PC	225	mW
Thermal Resistance From Junction To Ambient	ROJA	417	°C/W
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55~+150	°C



# MMBTH10

## SOT-23 Plastic-Encapsulate Transistors

### ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

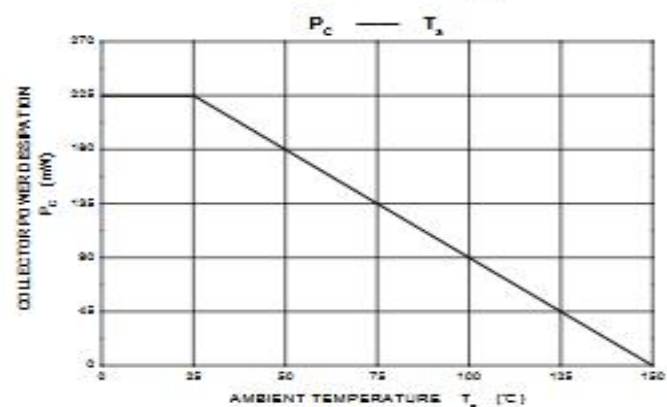
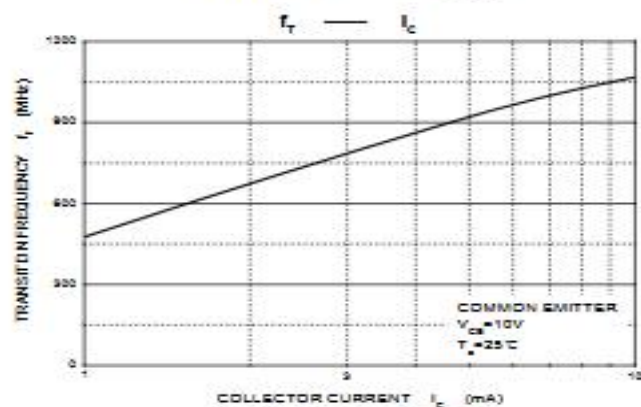
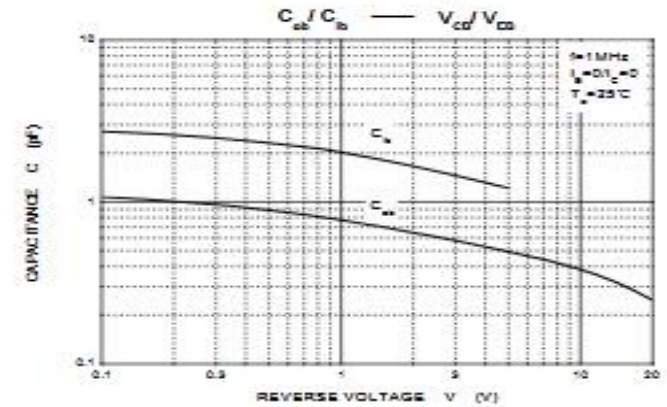
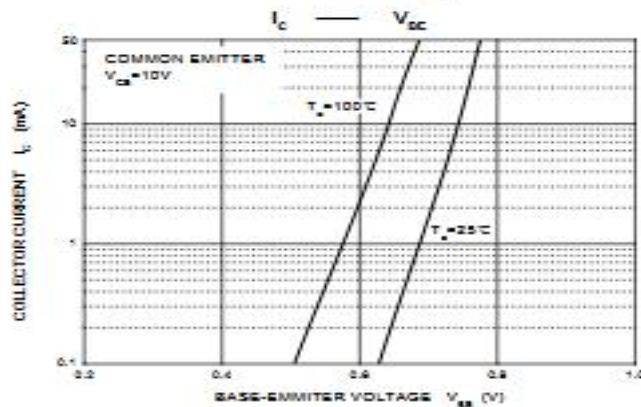
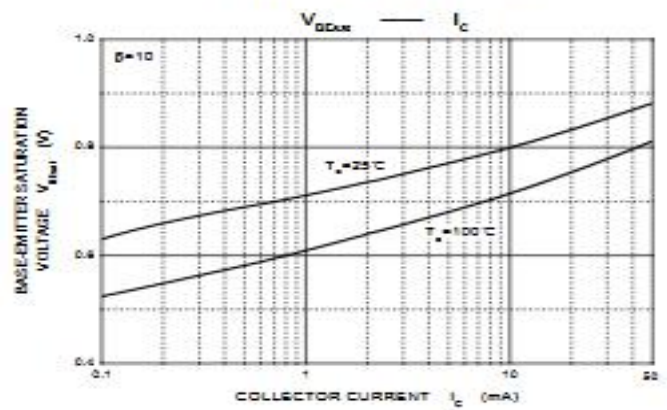
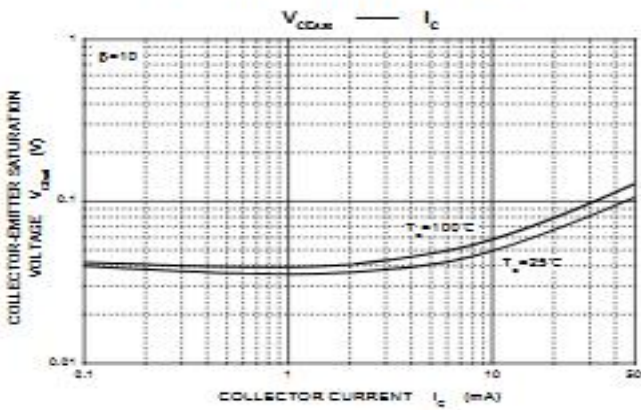
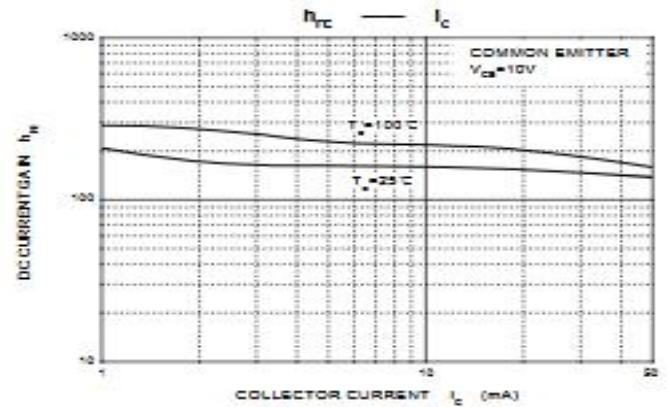
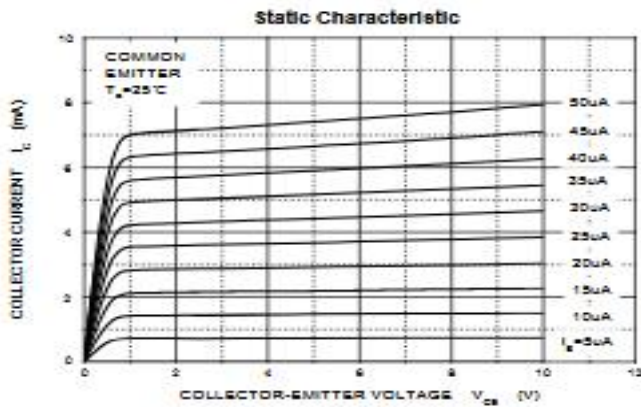
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Collector-base breakdown voltage	V(BR)CBO	IC= 100μA, IE=0	30			V
Collector-emitter breakdown voltage	V(BR)CEO	IC= 1mA, IB=0	25			V
Emitter-base breakdown voltage	V(BR)EBO	IE= 10μA, IC=0	3			V
Collector cut-off current	ICBO	VCB= 25V , IE=0			0.1	μA
Emitter cut-off current	IEBO	VEB= 2V , IC=0			0.1	μA
DC current gain	hFE	VCE=10V, IC= 4mA	60			
Collector-emitter saturation voltage	VCE(sat)	IC= 4 mA, IB= 4 mA			0.5	V
Base-emitter saturation voltage	VBE(sat)	IC= 10 mA, IB= 4mA			0.95	V
Transition frequency	fT	VCE=10V, IC= 4mA f=400MHz	650			MHz
Collector output capacitance	Cob	VCB=10V, IE=0, f=1MHz			0.7	pF

### CLASSIFICATION OF hFE

Rank	L	H
Range	60-100	100-200

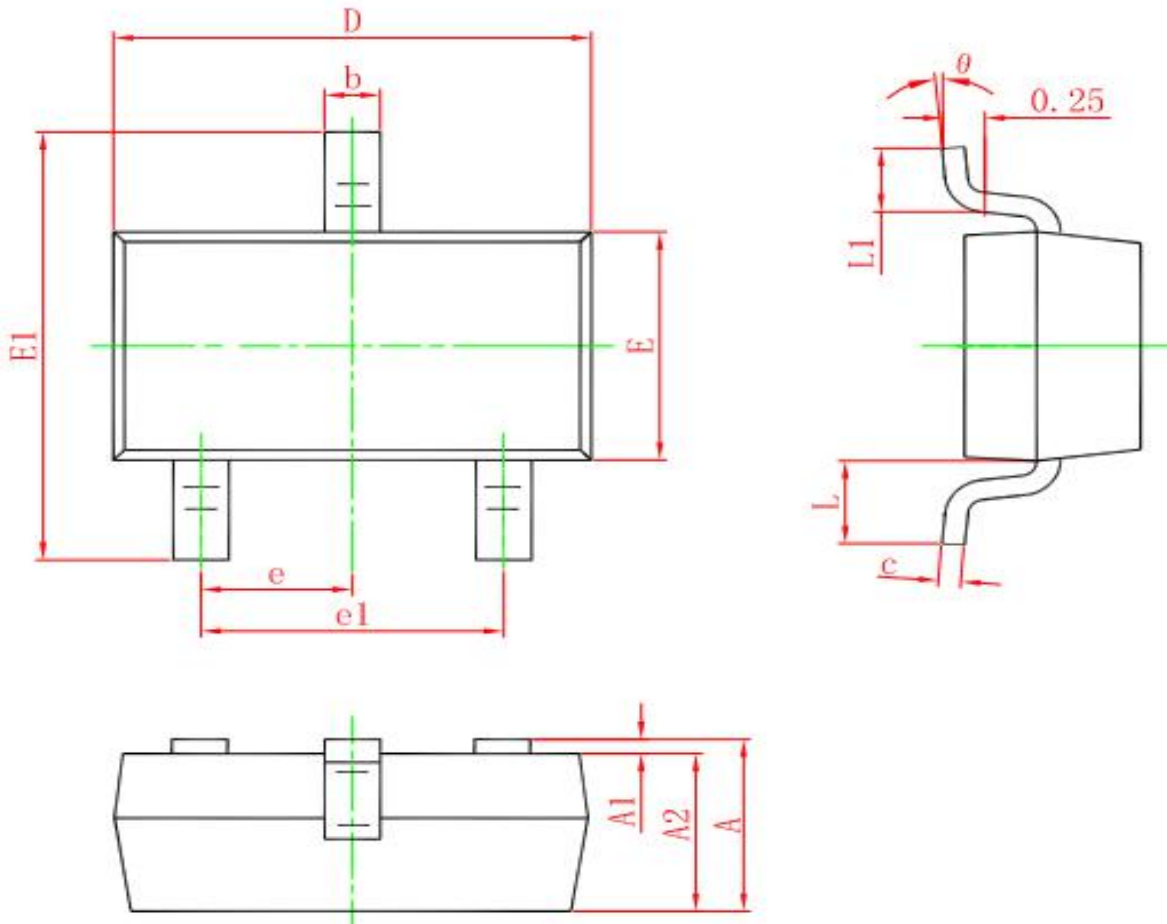
## SOT-23 Plastic-Encapsulate Transistors

### TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS



## SOT-23 Plastic-Encapsulate Transistors

SOT-23 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°